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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/099,698	03/13/2002	Regis Vaillant	14XZ00157	1979
23413	7590	12/21/2005	EXAMINER	
CANTOR COLBURN, LLP 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002			ARTMAN, THOMAS R	
			ART UNIT	PAPER NUMBER
			2882	

DATE MAILED: 12/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

Office Action Summary	Application No. 10/099,698	Applicant(s) VAILLANT ET AL.	
	Examiner Thomas R. Artman	Art Unit 2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-5,7,8,13-16,18-23,25-39 and 41-91 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,3-5,7,8,13-16,18-23,25-39 and 41-47 is/are allowed.
- 6) ☒ Claim(s) 48-53,61-68,72-83 and 88-91 is/are rejected.
- 7) ☒ Claim(s) 54-60,69-71 and 84-87 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claim 55 is objected to because of the following: it is a verbatim copy of claim 54, both of which are dependent upon the same claim. Therefore, claim 55 is redundant and therefore should be deleted or should properly have the dependency changed. Appropriate correction is required.

Claim 65 is objected to because of an apparent claim dependency error. It appears as though claim 64 should depend from claim 64, not from claim 20. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 48-53, 61-67, 73, and 77-83 are rejected under 35 U.S.C. 102(e) as being anticipated by Charles (US 6,816,564).

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Regarding claims 48, 61 and 77, Charles discloses an apparatus and method (Figs. 1A, 1B, 3, 6A and 9D), including:

a) an x-ray source 133 and means for acquiring images 152, both of which are mounted so as to rotate about at least one axis (gantry 122) with respect to a support 190 that supports an object 191 to be x-rayed,

b) acquiring at least two images corresponding to two different angular positions of the X-ray source and means for acquiring images (Fig. 1B) separated by an angle greater than 15 degrees (45 degrees; col.7, line 60, through col.8, line 11),

c) identifying, on these images, projections of at least one point of the X-rayed object (bone center), and

d) determining the magnification factor of at least one of the images, first, as a function of the angular displacement of the X-ray source and means for acquiring images, and second, as a function of the positions on these images of the identified projections (col.17, lines 9-17 and 27-45).

Regarding claim 64, Charles discloses a method (Figs. 1A, 1B, 3, 6A and 9D), including:

a) an x-ray source 133 and means for acquiring images 152,

b) determine a distance from the means for acquiring images to the object (col.17, lines 9-17 and 27-65),

c) taking first and second projections of an object at two different angles with respect to a reference (Fig. 1B and col.7, line 60, through col.8, line 11),

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d) calculating on the basis of the projections a spatial position of a point on the object (col.17, lines 9-17 and 27-65), and

e) calculating the distance from the X-ray source to the object (focal point to center of bone) based on the spatial position to determine the magnification factor (col.17, lines 9-17 and 27-65).

With respect to claims 49, 50, 62, 63, 66, 67, 73 and 78-82, Charles further discloses that the angular displacement between the two images is about 45 degrees (col.7, line 60, through col.8, line 11).

With respect to claims 51-53 and 83, Charles further discloses that a plurality of images are acquired between a first and second angular position (Fig.9D, as well as col.17, lines 46-53).

With respect to claim 65, Charles further discloses that the magnification factor is determined first, as a function of the angular displacement of the X-ray source and means for acquiring images, and second, as a function of the positions on these images of the identified projections (col.17, lines 9-17 and 27-45).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 72, 74-76 and 88-91 are rejected under 35 U.S.C. 103(a) as being unpatentable over Charles, as applied to claims 20, 21 and 33 above.

With respect to all the above claims, Charles does not specifically disclose image acquisition rates of 15 to 30 degrees per second, gantry rotation rates of 30 to 90 degrees per second, with each image being taken at an angular separation of 20 degrees. However, the device of Charles is a computed tomography (CT) device, in which such rotational rates and image acquisition rates are commonplace. Further, Charles does disclose taking images at 30-degree intervals (Fig.9D).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the device of Charles to have such fast, CT image acquisition rates and gantry rotation rates in order to reduce blurring due to patient motion. Further, it would have been obvious to one of ordinary skill in the art at the time the invention was made for Charles to take images every 20 degrees instead of every 30 degrees in order to improve the accuracy of the magnification calculation as well as obtain more complete image data of the bone in order to improve the health and risk analyses performed on the bone.

Allowable Subject Matter

Claims 1, 3-5, 7, 8, 13-16, 18-23, 25-39 and 41-47 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: claims 1, 16, 20 and 33 are allowed by virtue of incorporating the indicated allowable subject matter in the previous Office action, dated August 9th, 2005.

Claims 3-5, 7, 8, 13-15, 18, 19, 21-23, 25-32, 34-39, 41-47 are allowed by virtue of their dependency.

Claims 54-60, 69-71 and 84-87 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record neither teaches nor reasonably suggests the additional limitation of using automated tracking methods in conjunction with the magnification determination method as required by each of claims 54-57, 60, 69, 71, 84, 85 and 87.

Claims 58, 59, 70 and 86 are allowed by virtue of their dependency.

Response to Arguments

Applicant's arguments filed November 1st, 2005, have been fully considered but they are not persuasive. Applicants assert that Charles does not qualify as prior art. The examiner respectfully disagrees.

First, the examiner wishes to remind Applicants that Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Second, the examiner wishes to clarify the proper US filing date for Charles, Jr. et al. (US 6,816,564 B2). Charles, Jr. et al. is a national stage entry of PCT/US01/47031. The PCT was filed on November 8th, 2001, and was subsequently published in English. Since the filing date of the PCT is after November 28th, 1999, then the filing date for the Charles, Jr. et al. patent in the United States is November 8th, 2001.

Third, the examiner acknowledges that this date is later than the priority date claimed by Applicants. However, the Charles, Jr. et al. PCT claims priority to a US provisional application # 60/246,679 that was filed on November 8th, 2000. This date falls prior to the foreign filing date of Applicants' claim to foreign priority.

The examiner has determined that there is insufficient support in the above provisional application for the specific magnification determination methods relied upon in the disclosure of Charles, Jr. et al. Therefore, upon providing the full translation of the foreign priority document in accordance with 37 CFR 1.55, the above rejections based on Charles, Jr. et al. will be withdrawn if support for the claimed magnification determination method is found in the priority document.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Roehm (US 5,293,574) teaches a similar automated tracking method without any mentioning of determining a magnification factor from two different projects. Webber (US 6,289,235) teaches the practice of determining magnification factors through use of fiducial markers. Webber (US 5,359,637) teaches a calibration method.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas R. Artman whose telephone number is (571) 272-2485. The examiner can normally be reached on 9am - 5:30pm Monday - Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thomas R. Artman
Patent Examiner



Craig E. Church
Primary Examiner